Abstract

These Application Notes describe the procedures for configuring the Voice Print Activ! Voice Call Logger to monitor and record calls placed to and from stations, and to Vector Directory Numbers (VDN) on Avaya Communication Manager. When the recording of a call is desired, the Voice Print Activ! Voice Call Logger issues a Single Step Conference request through events acquired from the Telephony Services Application Programming Interface (TSAPI). In the configuration discussed in these Application Notes, Voice Print Activ! Voice Call Logger employs Device, Media and Call Control Application Programming Interface (API) virtual stations as recording ports. During compliance testing, Voice Print Activ! Voice Call Logger successfully recorded calls placed to and from stations, as well as calls placed to a VDN and then queued to an agent hunt/skill group.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.
1. Introduction

These Application Notes describe a compliance-tested configuration comprised of an Avaya Communication Manager, an Avaya Application Enablement Services (AES) Server and the Voice Print Activ! Voice Call Logger. Activ! Voice Call Logger monitors, records, stores, and plays back phone calls for verification. Activ! Voice Call Logger uses TSAPI with an Avaya AES server to monitor stations, and/or VDNs, i.e. to obtain recording triggers and call information. Activ! Voice also uses the Device, Media and Call Control (DMCC) API with the Avaya AES server to register DMCC softphones that Activ! Voice Call Logger uses as recording ports. When recording of a call is desired, Activ! Voice Call Logger issues a Single Step Conference request through events acquired from TSAPI.

Figure 1 provides the test configuration used for the compliance test. Note that actual configurations may vary. The solution described herein is also extensible to other Avaya Servers and Media Gateways. An Avaya S8300 Server with an Avaya G700 Media Gateway was included during the test, to provide a T1/ISDN-PRI trunk between two Avaya Communication Manager systems.

Figure 1: Sample Test Configuration for the Voice Print Activ! Voice Call Logger Solution
2. Equipment and Software Validated

The following equipment and software/firmware were used for the sample configuration provided:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Software/Firmware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya S8720 Server</td>
<td>Avaya Communication Manager 5.0 (R015x.00.0.825.4)</td>
</tr>
<tr>
<td>Avaya G650 Media Gateway</td>
<td>-</td>
</tr>
<tr>
<td>TN2312BP IP Server Interface</td>
<td>HW11 FW030</td>
</tr>
<tr>
<td>TN799DP C-LAN Interface</td>
<td>HW20 FW017</td>
</tr>
<tr>
<td>TN2302AP IP Media Processor</td>
<td>HW01 FW108</td>
</tr>
<tr>
<td>Avaya S8300 Server with Avaya G700 Media Gateway</td>
<td>Avaya Communication Manager 5.0 (R015x.00.0.825.4)</td>
</tr>
<tr>
<td>Avaya Application Enablement Services Server</td>
<td>R4.1.31.2</td>
</tr>
<tr>
<td>Avaya 4600 Series IP Telephones</td>
<td>4620SW (H.323) 2.8</td>
</tr>
<tr>
<td></td>
<td>4625SW (H.323) 2.8</td>
</tr>
<tr>
<td>Avaya 9600 Series IP Telephones</td>
<td>9630 (H.323) 1.5</td>
</tr>
<tr>
<td></td>
<td>9650 (H.323) 1.5</td>
</tr>
<tr>
<td>Avaya 6408D+ Digital Telephone</td>
<td>-</td>
</tr>
<tr>
<td>Analog Telephones</td>
<td>-</td>
</tr>
<tr>
<td>Voice Print Activ! Voice Server on Windows Microsoft 2003 Enterprise with Service Pack 2</td>
<td>4.0.6.2</td>
</tr>
</tbody>
</table>

3. Configure Avaya Communication Manager

This section provides the procedures for configuring a Computer Telephony Integration (CTI) link, Universal Caller ID (UCID), hunt/skill groups, vectors, Vector Directory Numbers (VDN), agents, agent login/logoff codes, and recording ports on Avaya Communication Manager. All the configuration changes in Avaya Communication Manager are performed through the System Access Terminal (SAT) interface. The highlights in the following screens indicate the values used during the compliance test.

3.1. AES Link between Avaya Communication Manager and Avaya Application Enablement Services Server

The Avaya AES server forwards CTI requests, responses, and events between the Voice Print Activ! Voice Call Logger and Avaya Communication Manager. The AES server communicates with Avaya Communication Manager over an AES link. Within the AES link, CTI links may be configured to provide CTI services to CTI applications such as the Voice Print Activ! Voice Call Logger. The following steps demonstrate the configuration of the Avaya Communication Manager side of the AES and CTI links. See Section 4 for the details of configuring the AES side of the AES and CTI links.
Enter the `add cti-link m` command, where m is a number between 1 and 64, inclusive. Enter a valid Extension under the provisioned dial plan in Avaya Communication Manager, set the Type field to ADJ-IP, and assign a descriptive Name to the CTI link.

```
add cti-link 4
```

Enter the `change node-names ip` command. In the compliance-tested configuration, the CLAN IP address was utilized for registering H.323 endpoint (Avaya IP Telephones and IP Softphones, and AES Device, Media and Call Control API stations) and the CLAN-AES IP address was used for connectivity to Avaya AES.

```
change node-names ip
```

Enter the `change ip-services` command. On Page 1, configure the Service Type field to AESVCS and the Enabled field to y. The Local Node field should be pointed to the CLAN-AES board that was configured previously in the IP NODE NAMES form in this section. During the compliance test, the default port was utilized for the Local Port field.

```
change ip-services
```

On Page 4, enter the hostname of the AES server for the AE Services Server field. The server name may be obtained by logging in to the AES server using ssh, and running the command `uname –a`. Enter an alphanumeric password for the Password field. Set the Enabled field to y. The same password will be configured on the AES server in Section 4.1.

```
change ip-services
```
3.2. Universal Call ID (UCID) Configuration

Enter the `display system-parameters customer-options` command. On Page 3, verify the Computer Telephony Adjunct Links field is set to `y`, to enable the UCID feature. If not, contact an authorized Avaya account representative to obtain the license.

Enter the `change system-parameters features` command to enable the Universal Call ID (UCID) feature. On Page 5 of the system-parameters features form, verify that the Create Universal Call ID (UCID) field is set to `y`, and the UCID Network Node ID field is specified. The UCID Network Node ID can be obtained by executing the `display dialplan parameters` command.
On Page 12 of the system-parameters features form, verify that the Send UCID to ASAI field is set to y.

<table>
<thead>
<tr>
<th>FEATURE-RELATED SYSTEM PARAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGENT AND CALL SELECTION</td>
</tr>
<tr>
<td>MIA Across Splits or Skills? n</td>
</tr>
<tr>
<td>ACW Agents Considered Idle? y</td>
</tr>
<tr>
<td>Call Selection Measurement: current-wait-time</td>
</tr>
<tr>
<td>Service Level Supervisor Call Selection Override? n</td>
</tr>
<tr>
<td>Auto Reserve Agents: none</td>
</tr>
<tr>
<td>ASAI</td>
</tr>
<tr>
<td>Copy ASAI UUI During Conference/Transfer? n</td>
</tr>
<tr>
<td>Call Classification After Answer Supervision? n</td>
</tr>
<tr>
<td>Send UCID to ASAI? y</td>
</tr>
<tr>
<td>CALL MANAGEMENT SYSTEM</td>
</tr>
<tr>
<td>Reporting Adjunct Release:</td>
</tr>
<tr>
<td>BCMS/VuStats LoginIDs? y</td>
</tr>
<tr>
<td>BCMS/VuStats Measurement Interval: hour</td>
</tr>
<tr>
<td>BCMS/VuStats Abandon Call Timer (seconds):</td>
</tr>
<tr>
<td>Validate BCMS/VuStats Login IDs? y</td>
</tr>
<tr>
<td>Clear VuStats Shift Data: on-login</td>
</tr>
<tr>
<td>Remove Inactive BCMS/VuStats Agents? N</td>
</tr>
</tbody>
</table>

3.3. Hunt/Skill Groups, Agent Logins, and Call Vectoring

Enter the display system-parameters customer-options command. On Page 6, verify that the ACD, Expert Agent Selection (EAS) and Vectoring (Basic) fields are set to y. If not, contact an authorized Avaya account representative to obtain these licenses.

<table>
<thead>
<tr>
<th>CALL CENTER OPTIONAL FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Center Release: 3.0</td>
</tr>
<tr>
<td>ACD? y</td>
</tr>
<tr>
<td>BCMS (Basic)? y</td>
</tr>
<tr>
<td>BCMS/VuStats Service Level? n</td>
</tr>
<tr>
<td>BSR Local Treatment for IP &amp; ISDN? n</td>
</tr>
<tr>
<td>Business Advocate? n</td>
</tr>
<tr>
<td>Call Work Codes? n</td>
</tr>
<tr>
<td>DTMF Feedback Signals For VRU? n</td>
</tr>
<tr>
<td>Dynamic Advocate? n</td>
</tr>
<tr>
<td>Expert Agent Selection (EAS)? y</td>
</tr>
<tr>
<td>Forced ACD Calls? n</td>
</tr>
<tr>
<td>Least Occupied Agent? n</td>
</tr>
<tr>
<td>Lookahead Interflow (LAI)? n</td>
</tr>
<tr>
<td>Multiple Call Handling (On Request)? n</td>
</tr>
<tr>
<td>Multiple Call Handling (Forced)? n</td>
</tr>
<tr>
<td>PASTE (Display PBX Data on Phone)? n</td>
</tr>
<tr>
<td>Vectoring (Basic)? y</td>
</tr>
<tr>
<td>Vectoring (Prompting)? n</td>
</tr>
<tr>
<td>Vectoring (G3V4 Enhanced)? n</td>
</tr>
<tr>
<td>Vectoring (3.0 Enhanced)? n</td>
</tr>
<tr>
<td>Vectoring (ANI/II-Digits Routing)? n</td>
</tr>
<tr>
<td>Vectoring (G3V4 Advanced Routing)? n</td>
</tr>
<tr>
<td>Vectoring (CINFO)? n</td>
</tr>
<tr>
<td>Vectoring (Best Service Routing)? n</td>
</tr>
<tr>
<td>Vectoring (Holidays)? n</td>
</tr>
<tr>
<td>Vectoring (Variables)? n</td>
</tr>
<tr>
<td>(NOTE: You must logoff &amp; login to effect the permission changes.)</td>
</tr>
</tbody>
</table>
Once the Expert Agent Selection (EAS) field is set to **y**, from the previous step, enter the **change system-parameters features** command. On **Page 11**, verify that the Expert Agent Selection (EAS) Enabled field is set to **y**. To enable the EAS feature, the Expert Agent Selection field in both the system-parameters customer-options form and the system-parameters features form should be set to **y**.

```
change system-parameters features
FEATURE-RELATED SYSTEM PARAMETERS
CALL CENTER SYSTEM PARAMETERS
  EAS
    Expert Agent Selection (EAS) Enabled? **y**
    Minimum Agent-LoginID Password Length:
    Direct Agent Announcement Extension: Delay:
    Message Waiting Lamp Indicates Status For: station

VECTORING
  Converse First Data Delay: 0    Second Data Delay: 2
  Converse Signaling Tone (msec): 100    Pause (msec): 30
  Prompting Timeout (secs): 10
  Reverse Star/Pound Digit For Collect Step? **n**
  Store VDN Name in Station's Local Call Log? **y**

SERVICE OBSERVING
  Service Observing: Warning Tone? **y** or Conference Tone? **n**
  Service Observing Allowed with Exclusion? **n**
  Allow Two Observers in Same Call? **y**
```

Enter the **add hunt-group n** command, where **n** is an unused hunt group number. On **Page 1** of the hunt group form, assign a descriptive Group Name and Group Extension valid in the provisioned dial plan. Set the ACD, Queue, and Vector fields to **y**. When ACD is enabled, hunt group members serve as ACD agents and must log in to receive ACD split/skill calls. When Queue is enabled, calls to the hunt group will be served by a queue. When Vector is enabled, the hunt group will be vector controlled.

```
add hunt-group 1
HUNT GROUP
  Group Number: 1
  Group Name: test
  Group Extension: 50011
  Group Type: ucd-mia
  TN: 1
  COR: 1
  MM Early Answer? **n**
  Security Code: Local Agent Preference? **n**
  ISDN/SIP Caller Display:
  Queue Limit: unlimited
  Calls Warning Threshold: Port:
  Time Warning Threshold: Port:
```
On Page 2, set the Skill field to y, which means that agent membership in the hunt group is based on skills, rather than pre-programmed assignment to the hunt group.

```
add hunt-group 1

HUNT GROUP

Skill? y
AAS? n
Measured: internal
Supervisor Extension:

Controlling Adjunct: none

VuStats Objective:

Redirect on No Answer (rings):
Redirect to VDN:
Forced Entry of Stroke Counts or Call Work Codes? n
```

Enter the `add agent-loginID p` command, where p is a valid extension in the provisioned dial plan. On Page 1 of the agent-loginID form, enter a descriptive Name and Password.

```
add agent-loginID 50021

AGENT LOGINID

Login ID: 50021
Name: Agent-1
TN: 1
COR: 1
Coverage Path: 
Security Code: 

Password: 
Password (enter again):

AAS? n
AUDIX? n
LWC Reception: spe
LWC Log External Calls? n
AUDIX Name for Messaging:
LoginID for ISDN/SIP Display? n

Auto Answer: station
MIA Across Skills: system
ACW Agent Considered Idle: system
Aux Work Reason Code Type: system
Logout Reason Code Type: system
Maximum time agent in ACW before logout (sec): system
Forced Agent Logout Time: :

WARNING: Agent must log in again before changes take effect
```

On Page 2, set the Skill Number (SN) to the hunt group number previously created. The Skill Level (SL) may be set according to customer requirements.
Repeat this step as necessary to configure additional agent extensions.

```
add agent-loginID 50021
```

Enter the **change vector q** command, where *q* is an unused vector number. Enter a descriptive Name, and program the vector to deliver calls to the hunt/skill group number. Agents that are logged into the hunt/skill group will be able to answer calls queued to the hunt/skill group.

```
change vector 1
```

Enter the **add vdn r** command, where *r* is an extension valid in the provisioned dial plan. Specify a descriptive Name for the VDN and the **Vector Number** configured in the previous step. In the example below, incoming calls to the extension 50000 will be routed to testVDN50000, which in turn will invoke the actions specified in vector 1.

```
add vdn 50000
```

3.4. Recording Ports

The recording ports in this configuration are DMCC stations that essentially appear as IP Softphones, to Avaya Communication Manager. Each DMCC station requires an IP_API_A license. Note that this is separate and independent of Avaya IP Softphone licenses, which are required for Avaya IP Softphones but not required for AES DMCC stations. Enter the `display system-parameters customer-options` command and verify that there are sufficient IP_API_A licenses. If not, contact an authorized Avaya account representative to obtain these licenses.
Enter the `add station s` command, where s is an extension valid in the provisioned dial plan. On Page 1 of the STATION form, set the Type field to an IP telephone set type, enter a descriptive Name, specify the Security Code, and set the IP SoftPhone field to y. During the compliance test, the set type 4620 was used for recording stations. Repeat this as necessary, with the same Security Code, to configure additional DMCC stations. For the compliance test, stations from 23001 to 23046 were created for the purpose of recording. When multiple stations are involved, consider using the `duplicate station` command.

```
add station 23001
```

```
STATION

Extension: 23001
Type: 4620
Port: ip
Name: DMCC -1

Lock Messages? n              BCC: 0
Security Code: *              TN: 1
Coverage Path 1:              COR: 1
Coverage Path 2:              COS: 1
Hunt-to Station:

STATION OPTIONS

Loss Group: 19         Personalized Ringing Pattern: 1
Message Lamp Ext: 23001
Speakerphone: 2-way      Mute Button Enabled? y
Display Language: english Expansion Module? n
Survivable GK Node Name: Survivable COR: internal
Survivable Trunk Dest? y Media Complex Ext:
IP SoftPhone? y

IP Video Softphone? n

3.5. Recorded Stations

Enter the `add station s` command, where s is an extension valid in the provisioned dial plan. On Page 1 of the STATION form, set the Type field to an IP telephone set type, enter a descriptive Name, and specify the Security Code. For the compliance test, recorded stations from 22001 to 22009 were created.

```
add station 22001
```

```
STATION

Extension: 22001
Type: 4621
Port: S00142
Name: 72001

Lock Messages? n              BCC: 0
Security Code: *              TN: 1
Coverage Path 1:              COR: 1
Coverage Path 2:              COS: 1
Hunt-to Station:

STATION OPTIONS

Time of Day Lock Table:
Loss Group: 19         Personalized Ringing Pattern: 1
Message Lamp Ext: 22001
Speakerphone: 2-way      Mute Button Enabled? y
Display Language: english Expansion Module? n
Survivable GK Node Name: Survivable COR: internal
Survivable Trunk Dest? y Media Complex Ext:
IP SoftPhone? y

Customizable Labels? y
```
On Page 3 of the STATION form, for ABBREVIATED DIALING List 2, enter the abbreviated dialing group configured in Section 3.3. Configure the following BUTTON ASSIGNMENTS in addition to the call-appr (call appearance) buttons:

- auto-in
- aux-work
- abrv-dial – for Login
- abrv-dial – for Logout.

<table>
<thead>
<tr>
<th>add station 22001</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE DATA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room:</td>
<td>Headset? n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack:</td>
<td>Speaker? n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable:</td>
<td>Mounting: d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor:</td>
<td>Cord Length: 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building:</td>
<td>Set Color:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ABBREVIATED DIALING |       |       |
| List1: personal 1   |       |       |
| List2: group 1      |       |       |
| List3:              |       |       |

<table>
<thead>
<tr>
<th>BUTTON ASSIGNMENTS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1: call-appr</td>
<td>5:</td>
<td>auto-in</td>
</tr>
<tr>
<td>2: call-appr</td>
<td>6:</td>
<td>aux-work</td>
</tr>
<tr>
<td>3: call-appr</td>
<td>7:</td>
<td>abrv-dial</td>
</tr>
<tr>
<td>4:</td>
<td>8:</td>
<td>abrv-dial</td>
</tr>
</tbody>
</table>

4. Configure Avaya Application Enablement Services

The Avaya Application Enablement Services (AES) server enables Computer Telephony Interface (CTI) applications to control and monitor telephony resources on Avaya Communication Manager. The Avaya Application Enablement Services (AES) server receives requests from CTI applications, and forwards them to Avaya Communication Manager. Conversely, the Avaya Application Enablement Services (AES) server receives responses and events from Avaya Communication Manager and forwards them to the appropriate CTI applications.

This section assumes that installation and basic administration of the Avaya Application Enablement Services server has been performed. The steps in this section describe the configuration of a Switch Connection, a CTI user, a CMAPI port, and creating a CTI link for TSAPI.

4.1. Configure Switch Connection

Launch a web browser, enter https://<IP address of AES server>:8443/MVAP in the address field, and log in with the appropriate credentials for accessing the AES CTI OAM pages.
Select the **CTI OAM Administration** link from the left pane of the screen.

Click on **Administration → Switch Connections** in the left pane to invoke the Switch Connections page. A Switch Connection defines a connection between the Avaya AES and Avaya Communication Manager. Enter a descriptive name for the switch connection and click on **Add Connection**.
The next window that appears prompts for the Switch Connection password. Enter the same password that was administered in Avaya Communication Manager in Section 3.1. Default values may be used in the remaining fields. Click on Apply.

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on Edit CLAN IPs.
Enter the CLAN-AES IP address which was configured for AES connectivity in Section 3.1 and click on Add Name or IP. Repeat this step as necessary to add other C-LAN boards enabled with Application Enablement Services.

4.2. Configure the CTI Users
The steps in this section describe the configuration of a CTI user. Launch a web browser, enter https://<IP address of AES server>:8443/MVAP in the URL, and log in with the appropriate credentials to access the relevant administration pages.
The Welcome to OAM page is displayed next. Select **User Management** from the left pane.

From the Welcome to User Management page, navigate to the **User Management** → **Add User** page to add a CTI user.

On the Add User page, provide the following information:
- User Id
- Common Name
- Surname
- User Password
- Confirm Password

The above information (User ID and User Password) must match with the information configured in the Voice Print Server Configuration page in Section 5.

Select **Yes** using the drop down menu on the CT User field. This enables the user as a CTI user. Click the **Apply** button (not shown) at the bottom of the screen to complete the process. Default values may be used in the remaining fields.

Once the user is created, select **OAM Home** in upper right and navigate to the **CTI OAM Administration → Security Database → CTI Users → List All Users** page. Select the User ID created previously, and click the **Edit** button to set the permission of the user.
Provide the user with unrestricted access privileges by clicking the Enable button on the Unrestricted Access field. Click the Apply Changes button.

Navigate to the CTI OAM Home → Administration → Ports page to set the DMCC server port. During the compliance test, the default port values were utilized. The following screen displays the default port values. Since the unencrypted port was utilized during the compliance test, set the Unencrypted Port field to Enabled. Click the Apply Changes button (not shown) at the bottom of the screen to complete the process. Default values may be used in the remaining fields.
### Ports

<table>
<thead>
<tr>
<th>CVLAN Ports</th>
<th></th>
<th>Enabled</th>
<th>Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncrypted TCP Port</td>
<td>9999</td>
<td>R</td>
<td>C</td>
</tr>
<tr>
<td>Encrypted TCP Port</td>
<td>9980</td>
<td>R</td>
<td>C</td>
</tr>
</tbody>
</table>

| DLG Port | TCP Port | 5678 |

<table>
<thead>
<tr>
<th>TSAPI Ports</th>
<th></th>
<th>Enabled</th>
<th>Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSAPI Service Port</td>
<td>450</td>
<td>R</td>
<td>C</td>
</tr>
<tr>
<td>Local TLINK Ports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Min</td>
<td>1024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Max</td>
<td>1035</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncrypted TLINK Ports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Min</td>
<td>1050</td>
<td></td>
<td></td>
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<tr>
<td>TCP Port Max</td>
<td>1055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encrypted TLINK Ports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Min</td>
<td>1066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Max</td>
<td>1061</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DMCC Server Ports</th>
<th></th>
<th>Enabled</th>
<th>Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncrypted Port</td>
<td>4721</td>
<td>R</td>
<td>C</td>
</tr>
<tr>
<td>Encrypted Port</td>
<td>4722</td>
<td>R</td>
<td>C</td>
</tr>
<tr>
<td>TR/87 Port</td>
<td>4723</td>
<td>R</td>
<td>R</td>
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<table>
<thead>
<tr>
<th>H.323 Ports</th>
<th></th>
<th>TCP Port Min</th>
<th>TCP Port Max</th>
</tr>
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<tbody>
<tr>
<td>TCP Port Min</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCP Port Max</td>
<td>4100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3. Configure the TSAPI CTI Link

Navigate to the OAM Home → CTI OAM Admin → Administration → CTI Link Admin → TSAPI Links page to set the TSAPI CTI Link. Click on Add Link.

Select a Switch Connection using the drop down menu. The Switch Connection is configured in Section 4.1. Select the Switch CTI Link Number using the drop down menu. Switch CTI Link Number should match with the number configured in the cti-link form in Section 3.1. Click the Apply Changes button. Default values may be used in the remaining fields.

5. Configure the Voice Print Activ! Voice Call Logger

Voice Print installs, configures, and customizes the Activ! Voice Call Logger application for their end customers. This section only describes the interface configuration for the Activ! Voice Call Logger application to communicate with Avaya AES and Avaya Communication Manager. Refer to [3] for configuring the Voice Print Activ! Voice Call Logger application.

The following screen shows the Voice Print Server Configuration page. Provide the following information:

- **Server Machine Name** – Provide a Tlink name. To get the Tlink name, navigate to the Administration → Security Database → Tlinks page from the CTI OAM Home page in Avaya AES.
• Application User Name – Provide a User Id, created in Section 4.2.
• Application Password – Provide a User Password, created in Section 4.2.
• Server IP Address – Provide Avaya AES Client Connectivity IP address. The IP address can be obtained by navigating to the Administration → Network Configuration → Local IP page from the CTI OAM Home page in Avaya AES.
• Server Port – During the compliance test, the unencrypted port, 4721, was utilized.
• Switch (CLAN) Address – The CLAN IP address, which was utilized for registering AES DMCC stations.

Click on Apply to submit the changes.

6. Interoperability Compliance Testing
The interoperability compliance test included feature, serviceability, and performance testing. The feature testing evaluated the ability of the Voice Print Activ! Voice Call Logger to monitor and record calls placed to and from stations and to VDNs. The serviceability testing introduced failure scenarios to see if the Voice Print Activ! Voice Call Logger can resume recording after failure recovery. The performance testing stressed the Voice Print Activ! Voice Call Logger by continuously placing calls over extended periods of time.
6.1. General Test Approach
The general approach was to place various types of calls to and from stations, agents, and VDNs, monitor and record them using the Voice Print Activ! Voice Call Logger, and verify the recordings. For feature testing, the types of calls included internal calls, inbound and outbound trunk calls, transferred calls, bridged calls, and conferenced calls. Performance tests verified that the Voice Print Activ! Voice Call Logger could record calls during a sustained, high volume of calls. For serviceability testing, failures such as cable pulls, CTI link busyouts and releases, and resets were applied.

6.2. Test Results
All test cases were executed and passed.

7. Verification Steps
This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager and Avaya AES.

7.1. Verify Avaya Communication Manager
Verify the status of the administered AES link by using the **status aesvcs link** command.

```
status aesvcs link

AE SERVICES LINK STATUS
Srvcr/ AE Services Remote IP Remote Local Node Msgs Msgs
Link Server Port         Sent Rcvd
[1/01 server1 192.45.80.102 36538 CLAN-AES 17 18
```

Verify the status of the administered TSAPI CTI link by using the **status aesvcs cti-link** command.

```
status aesvcs cti-link

AE SERVICES CTI LINK STATUS
CTI Version Mnt AE Services Service Msgs Msgs
Link Busy Server State Sent Rcvd
2 no server1 restarting 15 15
4 no server1 established 15 15
```

7.2. Verify Avaya Application Enablement Services
From the CTI OAM Admin web pages, verify the status of the TSAPI and DMCC Services are ONLINE, by selecting **Status and Control ➔ Services Summary** from the left pane.
8. Support

Technical support for the Voice Print Activ! Voice Call Logger can be obtained by contacting VPI via the support link at http://support@vpi-corp.com or by calling the support telephone number at 1-805-389-5201.

9. Conclusion

These Application Notes illustrate the procedures for configuring the Voice Print Activ! Voice Call Logger call recording solution to monitor and record calls placed to and from stations and to VDNs on an Avaya Communication Manager system. In the configuration described in these Application Notes, the Voice Print Activ! Voice Call Logger employs Device, Media and Call Control Application Programming Interface virtual stations as recording ports. During compliance testing, the Voice Print Activ! Voice Call Logger successfully monitored events and recorded calls placed to and from stations, as well as calls placed to VDNs and then queued to an agent hunt/skill group. The Voice Print Activ! Voice Call Logger was also able to record calls under continuous call volumes over extended periods of time.

10. Additional References

This section references the Avaya and Voice Print documentation that are relevant to these Application Notes.

The following Avaya product documentation can be found at http://support.avaya.com.

The following documentation was provided by Voice Print